



IDEM's Surface Water Quality Assessment Program

Probabilistic Monitoring Program

Program Objective

The objective of this program is to provide a comprehensive, unbiased assessment of all Indiana streams for their ability to support aquatic life and recreational uses. This is accomplished by sampling randomly generated sites in major Indiana hydrologic units on a five year rotating basin schedule to assess and characterize overall water quality and biological integrity. Site selection is conducted by the United States Environmental Protection Agency (USEPA) National Health and Environmental Effects Research Laboratory (NHEERL), Western Ecology Division in Corvallis, Oregon. For those sites selected and approved for sampling, bacteriological contamination (*Escherichia coli*) will be sampled five times equally spaced over a 30-day period. Water chemistry and algae sample collections (phytoplankton and periphyton) will be made during three distinct time periods (May-June, July-August, and September-October). Fish community and habitat assessments are conducted once from June to October during stable or falling stream flows. Macroinvertebrate community and habitat assessments are performed once from July to November. See Technical Notes for more information on these sampling programs.

Program Participants

This program is operated through the Biological Studies Section and Surveys Section, Assessment Branch, Office of Water Quality, Indiana Department of Environmental Management (IDEM) with additional efforts by the Indiana State Department of Health Laboratory, United States Geological Survey (USGS), private laboratories under contract with the State of Indiana, USEPA NHEERL, USEPA Region 5 in Chicago, Illinois, and the Indiana Biological Survey Aquatic Research Center. Landowners and property managers throughout the state also participate in the Probabilistic Monitoring Program by assisting staff in accessing remote stream locations for the various sampling programs.

Program Description

Media:	Surface Water: Rivers and Streams
Study Area:	Statewide (in targeted basins based on a five year rotating basin cycle excluding the mainstem Ohio River and Lake Michigan)
Site Selection Type:	Sites are selected by a stratified random draw of streams contained within the targeted basin and within the geographic boundaries of Indiana. The sample design is weighted by Strahler stream order categories to achieve an approximately equal expected sample size across stream order (1 st , 2 nd , 3 rd , and 4 th or greater order streams).
Sampling Sites:	A minimum of 38 sites will be sampled in each of the major river basins (1-2 basins/year)
Data Collected:	Ambient <i>E. coli</i> concentrations, water chemistry and chlorophyll <i>a</i> , fish and macroinvertebrate assemblage data, as well as habitat evaluations

Program Products

All water quality and biological sampling data and subsequent assessments will serve as integral components of the Indiana Integrated Water Quality Monitoring and Assessment Report which satisfies 305(b) and 303(d) reporting requirements to USEPA. Water quality and biological assessments also aid in the development of refined water quality criteria, identify non-point source issues, as well as provide support for the Environmental Performance Partnership Agreement (EnPPA).

Technical Notes

For more information on each of the sampling programs that comprise the Probabilistic Monitoring Program view the following fact sheets:

- *E. coli* Sampling Program (B-019-OWQ-A-S-99-R5)
- Nutrient Sampling Program (B-026-OWQ-A-S-06-R0)
- Fish Community Sampling Program (B-004-OWQ-A-BS-98-R5)
- Macroinvertebrate Community Sampling Program (B-007-OWQ-A-BS-98-R4)

Contact Information

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<p>IDEM Information: (317) 232-8603 or 800-451-6027 800-743-3333(TDD) toll-free for Indiana residents www.IN.gov/idem/water/</p> <p>Report Environmental Emergencies: (888) 233-7745</p> <p>Confidential Technical Assistance: (800) 988-7901</p> <p>Pollution Complaint: www.IN.gov/idem/pollutioncomplaints/</p> <p>Questions and Comments: www.IN.gov/idem/contact/questions.html</p>	<p><u>For More Information on IDEM's Office of Water Quality...</u></p> <p>Assessment Branch (Surface water quality monitoring: rivers and streams, lakes, water quality standards) Shadeland Office, Indianapolis (317) 308-3173</p> <p>Compliance Branch (Compliance and inspections, data and information services, wastewater certification and continuing education) Indiana Government Center North, Indianapolis (317) 233-2545</p> <p>Drinking Water Branch (Public water supply supervision and ground water protection) Shadeland Office, Indianapolis (317) 308-3308</p> <p>Permitting Branch (Facilities Construction & Engineering Support, Industrial & municipal permits, modeling, and wet weather) Indiana Government Center North, Indianapolis (317) 232-8760</p> <p>Watershed Planning Branch (Rules development, wetlands, TMDL, watershed management) Indiana Government Center North, Indianapolis (317) 233-8488</p>
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